

BEST AVAILABLE COPY

CLAIMS

Claims 1 - 8. (cancelled)

9. (currently amended): A method for fabricating lubricating receptacles containing encapsulated rotatable mirrored balls in an optically transmissive solar concentrator sheet by means of at least one infiltrating fluid, the method comprising the process of:

- a) distributing solid mirrored balls in a solidifiable mixture to form a sheet;
- b) a) holding said mirrored balls for concentrating solar energy somewhat rigidly captive in place in said sheet during and at the completion of its formation;
- c) b) introducing said infiltrating fluid to expand said sheet and form; and
- d) form forming small fluid-filled individual annular cavities surrounding each said rotatable mirrored balls by the expansion caused by said infiltrating fluid.

10. (original): The method according to claim 9, wherein at least one dissolvable tray holds said mirrored balls in place in said sheet during its formation.

11. (original): The method according to claim 9, wherein at least one pillar supports said sheet to enhance fluid access during the sheet infiltration and expansion process.

12. (original): The method according to claim 9, wherein at least one of the fluids is optically transmissive.

13. (original): The method according to claim 9, wherein at least one of the fluids is a dielectric.

14. (original): The method according to claim 9, wherein the index of refraction of at least one of the fluids approximately matches that of said sheet.

15. (original): The method according to claim 9, wherein the density of at least one of the fluids approximately matches that of said mirrored balls.

16. (original): The method according to claim 9, wherein at least one of the fluids is lubricating.

17. (original): The method according to claim 9, wherein at least one of the infiltrating fluids is vaporously removed.

18. (currently amended): The method according to claim 9, wherein the ratio of the overall volume of said sheet (~~not including the volume of the ball cavities~~) to the volume of said mirrored balls is between a factor of 2 to 3.

19. (original): The method according to claim 9, wherein at least one monolayer of said rotatable mirrored balls is encapsulated in said sheet.

20 (currently amended): The method according to claim 9, wherein more than one size a ~~random dispersion~~ of rotatable mirrored balls are encapsulated in said sheet.

21. (currently amended): The method according to claim 9, wherein the mirrored balls are pre-coated, prior to being embedded in said sheet, to achieve minimal separation between the balls.

22. (original): The method according to claim 9, wherein the mirrored balls are asymmetrically closer to the top of said sheet than to the bottom.

23. (currently amended): The method according to claim 9, wherein said sheet is constructed of bonded laminar films.

24. (currently amended): The method according to claim 9, wherein zeolites are in the fluid bath to help keep it clean and deionized.

25. (new): A method of manufacturing a miniature optics, mirrored ball holding sheet comprising the fabrication stages of:

- a) dispersing a multitude of solid rotatable mirrored balls in a plasticizable mixture;
- b) forming a plastic sheet from said mixture which contains said balls with each ball individually encapsulated in the solidified sheet;
- c) introducing an infiltrating optically transmissive fluid that is absorbed more by said plastic sheet than by said balls; and

- d) said fluid causing the sheet to swell forming enlarged cavities that individually encapsulate each ball;

26. (new) The method of claim 25, wherein said sheet is part of a solar concentrator.

27. (new) The method of claim 25, wherein said fluid forms a lubricating shell surrounding each individually encapsulated ball.
28. (new): The method of claim 25, wherein said fluid is a dielectric.
- 29 (new) Apparatus for fabricating a miniature optics, ball holding sheet, comprising:
 - a) a hardenable fluid mixture within which are dispersed a multitude of solid rotatable mirrored balls;
 - b) means for hardening said fluid mixture containing the mirrored balls; and
 - c) means for providing an infiltrating liquid to expand the hardened mixture to form individual cavities surrounding each ball.
30. (new) The apparatus of claim 29, wherein said sheet is part of a solar concentrator.
31. (new) The apparatus of claim 29, wherein electromagnetic coupling means are provided to rotate said mirrored balls in an orientation responsive to an applied electromagnetic field.
32. (new): The apparatus of claim 29, wherein said liquid forms a lubricating shell surrounding each individually encapsulated ball.

BEST AVAILABLE COPY**CLAIMS**

Claims 1 - 8. (cancelled)

9. (currently amended): A method for fabricating lubricating receptacles containing encapsulated rotatable mirrored balls in an optically transmissive solar concentrator sheet by means of at least one infiltrating fluid, the method comprising the process of:

- a) distributing solid mirrored balls in a solidifiable mixture to form a sheet;
- b) holding said mirrored balls for concentrating solar energy somewhat rigidly captive in place in said sheet during and at the completion of its formation;
- c) introducing said infiltrating fluid to expand said sheet; and
- d) forming small fluid-filled individual annular cavities surrounding each said rotatable mirrored balls by the expansion caused by said infiltrating fluid.

10. (original): The method according to claim 9, wherein at least one dissolvable tray holds said mirrored balls in place in said sheet during its formation.

11. (original): The method according to claim 9, wherein at least one pillar supports said sheet to enhance fluid access during the sheet infiltration and expansion process.

12. (original): The method according to claim 9, wherein at least one of the fluids is optically transmissive.

13. (original): The method according to claim 9, wherein at least one of the fluids is a dielectric.

14. (original): The method according to claim 9, wherein the index of refraction of at least one of the fluids approximately matches that of said sheet.

15. (original): The method according to claim 9, wherein the density of at least one of the fluids approximately matches that of said mirrored balls.

16. (original): The method according to claim 9, wherein at least one of the fluids is lubricating.

17. (original): The method according to claim 9, wherein at least one of the infiltrating fluids is vaporously removed.

BEST AVAILABLE COPY

18. (currently amended): The method according to claim 9, wherein the ratio of the overall volume of said sheet to the volume of said mirrored balls is between a factor of 2 to 3.
19. (original): The method according to claim 9, wherein at least one monolayer of said rotatable mirrored balls is encapsulated in said sheet.
- 20 (currently amended): The method according to claim 9, wherein more than one size of rotatable mirrored balls are encapsulated in said sheet.
21. (currently amended): The method according to claim 9, wherein the mirrored balls are pre-coated, prior to being embedded in said sheet, to achieve minimal separation between the balls.
22. (original): The method according to claim 9, wherein the mirrored balls are asymmetrically closer to the top of said sheet than to the bottom.
23. (currently amended): The method according to claim 9, wherein said sheet is constructed of bonded laminar films.
24. (currently amended): The method according to claim 9, wherein zeolites are in the fluid to help keep it clean and deionized.
25. (new) A method of manufacturing a miniature optics, mirrored ball holding sheet comprising the fabrication stages of:
 - a) dispersing a multitude of solid rotatable mirrored balls in a plasticizable mixture;
 - b) forming a plastic sheet from said mixture which contains said balls with each ball individually encapsulated in the solidified sheet;
 - c) introducing an infiltrating optically transmissive fluid that is absorbed more by said plastic sheet than by said balls; and
 - d) said fluid causing the sheet to swell forming enlarged cavities that individually encapsulate each ball;
26. (new) The method of claim 25, wherein said sheet is part of a solar concentrator.

BEST AVAILABLE COPY

27. (new) The method of claim 25, wherein said fluid forms a lubricating shell surrounding each individually encapsulated ball.

28. (new): The method of claim 25, wherein said fluid is a dielectric.

29 (new) Apparatus for fabricating a miniature optics, ball holding sheet, comprising:

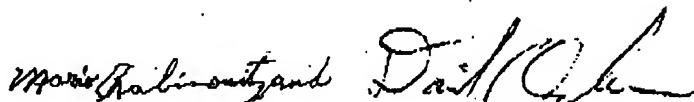
- a) a hardenable fluid mixture within which are dispersed a multitude of solid rotatable mirrored balls;
- b) means for hardening said fluid mixture containing the mirrored balls; and
- c) means for providing an infiltrating liquid to expand the hardened mixture to form individual cavities surrounding each ball.

30. (new) The apparatus of claim 29, wherein said sheet is part of a solar concentrator.

31. (new) The apparatus of claim 29, wherein electromagnetic coupling means are provided to rotate said mirrored balls in an orientation responsive to an applied electromagnetic field.

32. (new): The apparatus of claim 29, wherein said liquid forms a lubricating shell surrounding each individually encapsulated ball.

Respectfully submitted,



Mario Rabinowitz and David Overhauser, applicants

Please address correspondence to:

Mario Rabinowitz
715 Lakemead Way
Redwood City, CA 94062
Ph. & FAX 650, 368-4466; e-mail: Mario715@earthlink.net